



Rapid deployment structures



## Rubb military hangars

Rubb's Expeditionary Forces Aircraft Shelter System (EFASS) is designed to be rapidly deployed. Rubb fabric military buildings are reliable, durable and field maintainable engineered structures, suitable for areas of difficult terrain and harsh climatic conditions. Demountable, relocatable and reusable, EFASS aircraft hangars, sunshades, shelters and warehouses are available in three spans with multiple door options.

With unmatched relocatable fabric structures in action across the globe, Rubb has the ideal solution to military and defence application requirements. With a proven track record, clients include the UK, USA, UAE, Lithuanian and Canadian forces. Rubb has been meeting the needs of the UK Ministry of Defence for more than 30 years. Rubb Buildings Ltd has the expertise and facilities to custom make an extensive range of military hangars, buildings, shelters and sunshades to individual specifications.

## Explore our products

The EFASS	4
Aircraft hangars	6
UAV hangars	8
Sunshades	10
Vehicle shelters	12
Warehouses & Workshops	14
Field infrastructure	16
Attributes	18
Accessories	20
Support	22



# The EFASS

## Total quality

### Superior structural frame

The backbone of Rubb's Expeditionary Forces Aircraft Shelter System is a well engineered aluminium framing system. The 6082 T6 structural aluminium is anodized black and connecting steel components are hot dip galvanized to protect from corrosion.

### Simple foundations

EFASS products are supplied with their own integral foundation arrangements to securely anchor the structures to the ground.

### High quality membrane fabrics and fire safety

High strength, heavy weight, coated military standard fabrics from proven suppliers. The EFASS also offers fire safety advantages.

### Suitable for difficult sites

The flexible membrane and aluminium frame design allows installation on uneven or sloping sites.

### Efficient use of space

The truss frame system provides clear span space to accommodate a wide variety of rotary and fixed wing aircraft, land vehicles and equipment.

### Complete environmental control

EFASS fabric structures can be insulated, heated or air conditioned to provide a perfect operating environment, whatever the climate.

## Advantages

### Unique features you can trust

- EFASS provides a robust, reliable and field maintainable building to support military needs on difficult terrain and in harsh climates
- Complete EFASS range packs into 20ft ISO shipping containers using unique packing instructions
- Components can be unpacked and repacked by military personnel
- Structures can be quickly built without additional mechanical plant (crane or forklift truck)
- Fully demountable. EFASS structures can be dismantled, checked, stored, redeployed and erected for future missions
- Multiple spans: 11.1m (36ft), 20.4m (67ft) and 25m (82ft)
- Specially designed door options available, including Heli-Door, Trident and Roller Shutter solutions
- Roof mounted crane provides optimal operational capability (1000kg, 1500kg and 2000kg Safe Working Loads available)
- Withstands wind/snow loads to UK Defence Standards up to VE 41.6m per second (wind speed); 100kg per m<sup>2</sup> (snow load)
- Fabric is fire retardant and can be easily repaired
- Client support from Rubb technicians, from quotation to installation and beyond



# Aircraft hangars

**EFASS aircraft hangars** are available in various span widths including 11.1m, 20.4m and 25m.

**Door options** and door combinations are available featuring Heli-Door and Trident door solutions.

**Roof mounted crane** can be fitted on request. This system was developed around military helicopter maintenance crews' requirements.

**Typical lengths** range from 28m to 100m and can be extended or shortened by 4m (13ft) bays.

**Heating, Ventilation and Air Conditioning (HVAC)** solutions can be supplied to provide an environmentally controlled maintenance environment.

**Transportable** EFASS hangars can be packed into 20ft ISO shipping containers for delivery. The standard 20.4m building and electrics pack into just one 20ft container (packed container weighs 1200kg).

**EFASS military hangars** are currently being used by many military organisations around the world including UK, USA, UAE, Lithuanian and Canadian forces.



## UAV hangars

**UAV storage and maintenance facilities** are designed with a lower internal volume making these buildings easier and more cost effective to power (electrics, HVAC).

**EFASS UAV hangars** are available in various span widths including 11.1m, 20.4m and 25m.

**Typical lengths** range from 28m to 100m and are extendable by 4m (13ft) bays.

**Heli-Door** solutions are available for ease of access and egress.

**Research and Development** came into play to create the 'UAV POD', when the UK MoD requested Rubb create a lower span profile to accommodate their requirements.



## Sunshades

**EFASS sunshades** protect vital aircraft and crews from searing temperatures and powerful UV rays. Sunshades can be easily shortened, extended or modified into a hangar or warehouse.

**Innovation** and Rubb's commitment to Research and Development led to the creation of the EFASS sunshade after listening to feedback from military personnel.

**Sunshade structures** feature completely open gable ends and a large area of shade for operational aircraft and vehicles.

**EFASS sunshades** are available in various span widths including 11.1m, 20.4m and 25m.

**Typical lengths** range from 28m to 100m and are extendable by 4m (13ft) bays.



## Vehicle accommodation

**Rubb's EFASS range** features relocatable rapid erect hangars, ideal for military vehicle maintenance and storage requirements.

**EFASS vehicle shelters** are available in various span widths including 11.1m, 20.4m and 25m.

**Typical lengths** range from 28m to 100m and are extendable by 4m (13ft) bays.

**Door options** and door combinations are available featuring Heli-Door, Trident or Roller Shutter solutions.



## Warehouses & Workshops

**EFASS warehouses** can be easily configured to suit individual storage needs. The system provides an ideal warehouse space with large internal dimensions that can be shortened, extended or modified into a sunshade or hangar to meet future requirements.

**Warehouses** are available in various span widths, including 11.1m, 20.4m and 25m.

**Insulated fabric** option provides a rapidly deployable temperature controlled facility.

**Structures** can be built quickly without additional mechanical plant.

**Fast installation** can be led by Rubb, with your own team. The most recent 25m x 100m warehouse was erected in just 13 days, by a team of 11 personnel.





# EFASS Attributes

Rubb delivers the highest quality products, using only the best materials we can source. Our focus on excellence in engineering ensures we provide a structure you can trust

- Framework** The aluminium framework is designed to maximise strength, minimise weight and still be robust enough to withstand multiple erection procedures in hostile environments
- Foundation** The Rubb EFASS is supplied with its own integral foundation arrangement with various adaptations and accessories to securely anchor the structure to the ground
- Fabric cover** Double skin and insulation has been specifically designed to provide more acceptable working conditions for front-line aircraft hangarage and vehicle maintenance workshops, in both hot and cold conditions
- Packing** The EFASS range has been designed with packing, repacking and fast track transportation in mind. The structure is methodically packed depending upon specific transport requirements
- Containers** All EFASS structures can be packed into 20ft ISO shipping containers, making transport and delivery anywhere in the world quick and easy
- Doors** Hangar doors are available including Heli-Door, Trident and Roller Shutter options. The Trident door is exclusive to the 20.4m EFASS. Heli-Doors are available in five sizes to suit your needs. Visit [www.rubbmilitary.com](http://www.rubbmilitary.com) for more information



Heli-Door



Trident Door

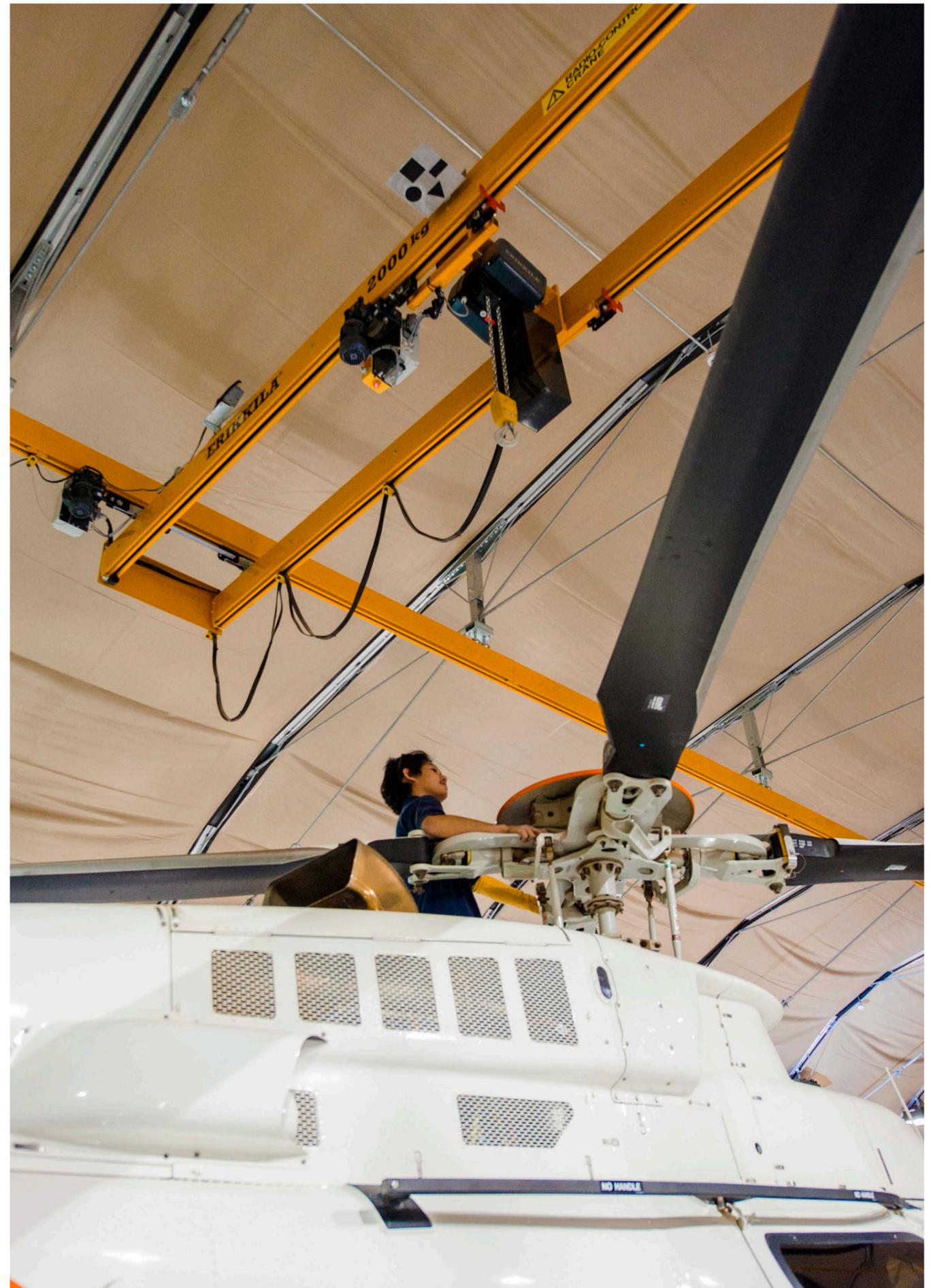


Roller Shutter Door

## EFASS Accessories

Rubb UK has developed an innovative range of accessories for our fabric hangar systems, based on feedback from end users, military experts and procurement officers

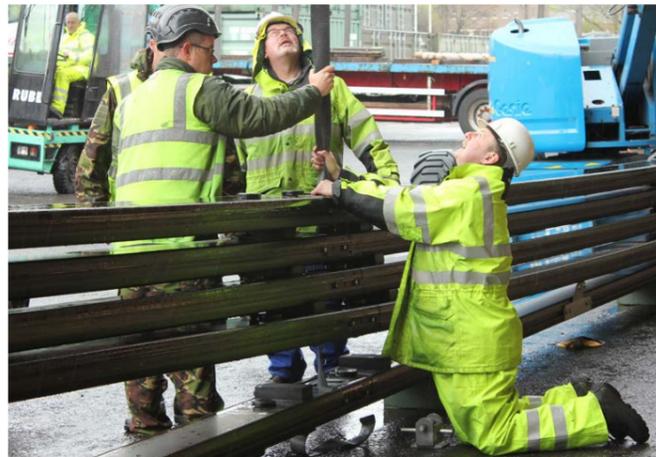
- **Electrics** are supplied in kit form with plug and play connections. Each kit is supplied with a power distribution panel designed to accommodate all currently available accessories, with the option of two power supply inputs
- **Tool Kit** A construction and installation tool kit can be provided for assembling and dismantling all Rubb EFASS aircraft hangars
- **Erection Kit** A full hangar erection kit includes all the necessary equipment to erect and dismantle the structure without the need of mechanical plant (crane or forklift truck)
- **HVAC** The EFASS range has been designed to allow the user to heat, ventilate, dehumidify or air condition the hangar. Structures are supplied with the duct inlet points ready for HVAC unit attachment
- **Roof mounted crane** which was developed around military helicopter maintenance crews' requirements (11.1m: 1000kg SWL, 20.4m: 1500kg SWL and 25m: 2000kg SWL)
- **Ballistic protection** offers added security for personnel and equipment. Available on request, Kevlar® panels can be supported in tracks on the internal walls of the hangars



# Rubb Support

Rubb personnel are on hand to provide help and support, from initial contact to quotation, installation and beyond. We are here to help you meet your goals in the field

- **Training** advisers and custom designed courses are available to fully instruct clients and end users on unpacking, erecting, using, dismantling and repacking Rubb EFASS military structures
- **Field Support** Rubb can supply personnel in the field. We are also available to answer your questions and offer advice by email and telephone. Formal documentation and spares can be issued from our office if required. All requests will receive a response within 24 hours
- **Refurbishment** Rubb provides a refurbishing and recertifying service for military organisations. Rubb completes a full inspection, repairing and servicing structures as required, then repacking items ready to be deployed once more
- **Erection Supervisor** Rubb can supply an erection adviser to work alongside your own labour force. With previous build locations in Iraq, Afghanistan, USA and the Seychelles, Rubb has a proven and reliable track record of providing the necessary training or erection service anywhere in the world





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